National Weather Service (NWS) Experimental Service Description Document (SDD)
March 2010
NWS Experimental Mobile Decision Support Services (MDSS) Interactive NWS (iNWS)
Warning Alert SMS and Text Messaging Services via Mobile Device Technologies**.**

Part 1 - Mission Connection

a. Service Description:

The NWS is responsible for providing weather warnings and alerts in a timely and effective manner to support the protection of life and property. The NWS must provide this information to an increasingly mobile user community who are utilizing rapidly evolving technologies for accessing Internet content via mobile wireless devices. In response to this the NWS is developing weather warning messaging services that take advantage of mobile device technologies such as Personal Digital Assistants (PDA) and cell phones, in order to better serve the emergency managers, local community leaders and other government agencies (NWS core partners.)

The NWS Western Region has developed an application that will provide real-time, warning messaging services tailored to the unique characteristics of cellular phones and mobile devices. The application has been named Mobile Decision Support Services **(MDSS)** interactive NWS **(iNWS).** Users can also elect to automatically receive weather warning alerts as they occur via an interactive web page for locations they choose via short message service (SMS) or text messaging, as well as email messages. The SMS or text alert provides a short headline in standard SMS format plus a hyperlink which the user can select to see more information. The application takes advantage of the recently adopted polygon for defining short fused NWS watches and warnings. SMS and text alerts will only be sent to those users who have chosen to be alerted within the area defined by the polygon. The application allows the user to define which broad class of alerts (hydrologic, marine, severe weather, etc) to be alerted for. The NWS Corporate Board approved the application for implementation as a National Experimental Service for NWS core partners in August, 2009.

iNWS services are provided via a web page http://inws.wrh.noaa.gov. In addition to the experimental service documented in this SDD, the web page describes other mobile services that are under development in a prototype/beta stage including iNWS Mobile Hydrology and iNWS Mobile Weather.

- iNWS Mobile Hydrology allows users to view AHPS river forecasts and hydrographs using a mobile cell phone browser. iNWS mobile uses data directly from the AHPS server

- iNWS Mobile weather allows users to view current conditions, forecasts and radar using a mobile cell phone browser. iNWS mobile weather uses data directly from the NWS web site and reformats for small cell screen

Currently, only the service " iNWS Mobile Alerting" is being provided as an experimental service to NWS core partners in preparation for a decision on operational implementation
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b. Purpose/Intended Use:

Providing NWS information in formats suitable for display on mobile devices and via text messaging allows access of this information in many mobile settings. This experimental service will duplicate content and warnings already provided by the NWS, reformatted for mobile devices.

The automated alert notification feature will provide critical decision support information, including weather warnings to core partners as they occur. For example, if a user creates a profile of interest for receiving tornado warnings via their cell phone, they will be notified of such a warning automatically when it is issued for their selected location. This is a critical element of the NWS mission to alert users of severe weather at anytime day or night for the protection of life.

c. Audience:

This service is intended to meet a wide range of needs for NWS core partners with mobile wireless capability. Provision of this service permits access to current NWS weather information from any location with mobile Internet service, and could include emergency management, transportation, safety (police and fire), commerce, and other local community decision leaders. This service will not be made available for the general public (non-community decision leaders) at this time. Users must request access to this capability through the MDSS iNWS website by accepting the terms of reference and providing basic contact information before gaining approval from NWS personnel.

d. Presentation Format:

The experimental application that WRH is developing for providing mobile warning alerts is named **MDSS iNWS**. The email and SMS with hyperlink presentation formats were determined to best serve the range of mobile device capability and customer
Are we using customer or user or both?
need. For full documentation on this application suite, please see
http://inws.wrh.noaa.gov.

iNWS SMS provides automated text message alerts when the NWS issues a watch, warning or advisory for a customer area of interest. The customer registers interest in a location by selecting an area on a map, or by texting a five-digit zip code to the WRH short-code (56149). For example, texting 20230 to 56149 will register interest in weather alerts for Washington, D.C. This capability uses SMS for text messaging and the same format for email messages. This allows easy access for users who access email from cell phone. This capability uses simple HTML (Hyper-Text Markup Language) and should work with the slowest Internet access.

Services required:

- **Cell Phone -- Text and email messaging**
  A customer can opt out of the service by texting STOP to 56149 or by going into the iNWS web page (preferred path)

Services required:

- **Cell Phone – Data plan and web browser**
  The graphical levels of service i.e., hyperlink, require an additional data service (Internet service) from the telecom provider. Cell/PDA data access is rapidly improving and access costs are dropping each year.

e. Feedback Method:

Comments will be compiled through September 30, 2010 and will be evaluated by the appropriate NWS program managers. Feedback can be submitted through an electronic survey posted on the website (http://www.weather.gov/survey/nws-survey.php?code=mama). Technical support will be obtained through the application support email address posted on the website (wr.mobile.alerts@noaa.gov.)

f. SDD Approval

This Experimental Service Description Document has been approved by Dave Caldwell, Director, NWS OCWWS.

Part 2 – Technical

a. Format and Science Basis:

This mobile warning alert messaging service is a next-generation NWS application bringing warning SMS and text alerts to mobile devices, automatically as weather events occur, based on customer location interest profiles
This service will provide weather and warning alert information directly to a cell phone display or via SMS text messaging. The application is compatible with and has been approved by the following United States cell phone carriers for providing experimental text messaging services.

AT&T
Verizon Wireless
T-Mobile
Sprint/Nextel
Virgin Mobile
Alltel
Boost
US Cellular
Dobson Cellular
Cricket Communications

Rural Cellular Corporation
Western Wireless

b. Availability:

This experimental service will be available on a "best-effort" basis, with a goal of 24 hours/ day, seven days a week. The iNWS SMS service requires customers to have a cell phone and text service from a mobile telecom provider. Latency between generation of the message and the delivery of the message is partially based on mobile cellular carriers plus small cellular carriers and not entirely on NWS performance. Latency is therefore best available with actual arrival ~1-2 minutes. The graphical levels of service i.e. hyper-link , require an additional data service (Internet service) from the telecom provider.

The need for the NWS Core Partners to be able to receive weather data and warnings is not limited to fixed environments such as in the office or at home, but is person-based and therefore needs to be mobile. In addition, customers want to have some control over the content of the data they receive in order to tailor it to their changing needs. This experimental application creates a service that addresses these requirements using relevant mobile technologies combined with valuable NWS weather data.

c. Additional Information:

This experimental service will be tested at all National Weather Service Offices. More information is available at http://inws.wrh.noaa.gov.